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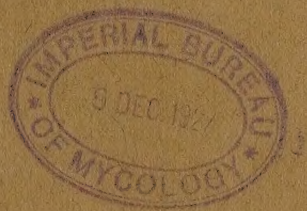
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INTERNATIONAL BULLETIN

OF

PLANT PROTECTION

DISCOVERIES AND CURRENT EVENTS IN WORLD PHYTOPATHOLOGY

Spain: The Orange Scale (*Icerya purchasi*) in Almería (1).

Icerya purchasi, Mask. was until lately unknown in Almería. On the occasion of a visit of inspection to a nursery garden belonging to the town a few specimens were found on *Laurus nobilis*, and on careful examination it proved that the parasite was also beginning to attack *Robinia Pseud-acacia*, *Acacia* sp., *Pittosporum* sp. and *Myoporum lactum*. Control was effected by spraying with a formula of which the basis was flour, soft soap, juniper oil and alcohol; as the infestation was slight, the nursery isolated, and the treatment thoroughly carried out, the spread of the parasite was checked.

Later on the same insect appeared on citrus and robinia plantations in the districts of Huerca de Almería and Vera, and with a view to checking its ravages, colonies of *Novius cardinalis*, Muls. have been obtained from the Valencia Phytopathological Station. These colonies are now multiplying and in this way a biological control will be instituted.

Rumania: The Yellow Rust of Cereals in 1927 (2).

Ordinarily "yellow rust" (*Puccinia glumarum* [Schmidt] Erikss. and Henn.) has not the importance in Rumania which it has in Northern and Western Europe and it appears after leaf rust caused by *P. tritici* and *P. simplex* (barley), *P. dispersa* (rye). This year, especially in Transylvania, yellow rust spread considerably from May onwards, attacking wheat, barley and rye. On "Grâu bălan", a Rumanian variety of wheat, at the present moment the blade of the four cauline leaves is com-

(1) Communication from the official correspondent to the Institute, Sr. Jesús M.^a BERRO Y AGUILERA, Ingeniero Agrónomo, Director of the "Estación de Patología Vegetal", Almería.

(2) Communication from the official correspondent to the Institute, Dr. Trajan SÁVULESCU, Professor at the "Școala Superioară de Agricultură", Herestrau-Bucharest.

pletely covered by uredospore pustules, while the fifth leaf close to the head is only covered with pustules on the terminal third of the blade. On one variety of wheat of French origin, grown in the experimental ground of the Agricultural Academy of Cluj, the pustules of *P. triticina* can still be found among those of *P. glumarum*. Rye is the least damaged. The cause of this unusual appearance of yellow rust, contrary to its normal appearance here, is due to the cold rainy weather, which prevailed in the district during May. In the rest of the country in the valley of the Danube, in the Dobrudja and in Bessarabia, owing to drought rust, has not yet appeared even on spring wheats or on the less resistant varieties. The drought, however, in certain places — Departments of Braïla, Buzău and in South Bessarabia (Bugeag) — has caused very serious and sometimes even total loss to cereal crops.

* * *

The yellow rust has also been reported as occurring still more frequently in North Bessarabia on wheat and barley especially in the districts of Orhei, Soreca and Bălți. Wheat is more attacked than barley and in some places losses may reach 20-30 % of the probable crop. Autumn sown wheat is more attacked than spring sown. In Transylvania as in Bessarabia its appearance has been helped by the wet cold spring. The disease made its appearance between 15 and 20 May.

Syria: The "Doudet el Zareh" (*Scythris temperatella*) (1).

One of the greatest wheat pests in Syria, after the locusts which are localized in certain parts of the country, is *Scythris temperatella* Ld. or "Doudet el Zareh". This Microlepidopteron has been notified for several years in young wheat crops, and sometimes in young barley in the country of the Alaouites, the Sandjak of Alexandretta, and all the interior of Syria from Aleppo to the lands to the North East of Damascus.

Losses caused by this insect amount to millions of francs, on an area of 2,670 ha. for the State of Syria alone. The loss is relatively less important in the South as compared with that in the Vilayet of Aleppo, though in 1926, a year of abundant rain, plant growth in certain districts does not appear to have been much damaged, and the crop seems to have suffered very little from the insects' attack.

The insect is usually found in poor, lime rich soils, and where the earth has been properly cultivated and sufficiently manured the risk of attack is very slight. This peculiarity is very clearly seen in the soils of the Aleppo district, of whatever kind they are.

(1) Communication from the official correspondent to the Institute, M. Raphaël HALLAGÉ, Inspector of the Consultative Commission of Epiphyties attached to the High Commission of the French Republic in Syria and Lebanon, at Damascus.

At Homs the attack is most noticeable in calcareous, white, light soil, although the larvae of *Scythris* are also found in deep, fertile red soils. At Hauran the type of soil has no influence at all on the insect; it is found equally in calcareous-argillaceous and sandy-argillaceous soils, sometimes in deep soils, and sometimes in shallow. These numerous observations show that *Scythris* has no preference for one particular type of soil, but given favourable conditions of food, environment and climate it is quick to multiply and do damage.

Biology of the insect. — Following my own observations and helped by information gleaned here and there and elicited from growers, I established the fact that the adult *Scythris* generally appeared in the Aleppo district in April or May according to the temperature; occasionally its presence was established at the end of February, as was actually the case in 1926. Spring rains do not always influence the biology of the insect favourably. At Homs swarming was noted at the beginning of April (1-10) and at the same time the adult was notified in Hauran.

Towards the end of April, actually on 24 April, I noticed several adults pairing and the eggs were laid under a thin layer of soil at the beginning of May. After these acts of reproduction the insects disappeared.

These particular eggs should hatch in June, according to certain cultivators who had noticed small larvae at that time. The young larvae pass all the summer and part of the autumn in a latent state and only awake to active existence again when the soil is covered with growing plants, when they burrow into the very delicate parenchyma of the leaf to do their damage and perpetuate their existence. In my second tour in August, I continued to study on the spot the life cycle of *Scythris* and visited the fields which had been infested by the insect in 1926. There, at 4-5 cm. beneath the soil surface I found cocoons 1.5 cm. long containing small *Scythris* larvae. The moth must have deposited her eggs in the interstices of the cracked ground at the foot of the root of a weed called "Akoule" by the natives, which is a sort of green thistle.

The question whether the attack of this insect always takes place on the same plot of ground or on plots more or less distant from one another cannot be definitely answered. At Aleppo it has been found equally on plots where its presence had never before been notified, as also on ground previously infested. At Homs and at Hauran it has been noted that the insect actually makes its reappearance every year in infected soil, that this soil is the object of its attack nearly every year in the parts under crops, and that with a three-course rotation *Scythris* can be destroyed.

In the district of Aleppo, as at Homs, its attacks are more felt by the late than the early sowings, whereas at Hauran the larva makes no such distinction. In the coast districts the insect seems to prefer the low coast soils. It appears at the end of April, pursues its life cycle and finishes its destructive existence at the end of March. Hot, burning wind hinders the development of the larva. Only one generation of the insect is observed on the coast.

Damage. — The attack is first made on the top edge of the

cereal leaves, into which the "Doudet el Zareh" penetrates and instals itself within the parenchyma to eat the chlorophyll material. The attack is severe as long as the season is dry, since abundant rain on the early sowings has an excellent influence on the fields attacked by the insect. Moreover, soils of a poor physical composition are generally attacked, while I established the fact that lands sufficiently manured were always protected although immediately adjoining ground invaded by *Scythris*.

Plants attacked by the insect. — Several of the grasses such as wheat, barley, and wild oats, as well as many weeds, are attacked by *Scythris*. The presence of the insect is also found on *Geranium tuberosum*.

One of the factors in the spread of "Doudet el Zareh" is the lack of care given by the cultivator to his lands.

I also noted that the fields attacked are covered by a weed called in the native language "Massice" which is one of the grasses and resembles rye-grass. It invades wet districts and seems to be the host on which chrysalids of *Scythris* hibernate.

I was able to ascertain that the chemical composition of the soil influences the insect's attack.

Preventive methods of destruction. — (1) Deep ploughing after harvest is necessary to destroy the hatchings which will have taken place in June, the larvae from which will have remained hidden in the interstices of the soil for hibernation.

(2) In fields already infected, ploughing must be carried out very carefully so that there shall be no point in that particular piece of infected ground where the plough does not pass and repass for the destruction of all weeds which harbour and feed the insect. All the ground in the neighbourhood to which the insect may have spread should be cleaned. This practice is an essential condition for getting rid of the insects.

(3) Where the ground has been well cleaned by ploughing, it is a good plan, where possible, not to sow cereals such as barley and wheat, but to content oneself with summer crops such as cotton, sorghum, water-melon, melon and chick peas.

(4) Several birds, such as the crow, the "Samarmar" (*Sturnus vulgaris*) and another grey-black bird, eat this insect in great quantities and it would therefore be useful to put them on the Ministry's Schedule of Protected Birds.

Mechanical and chemical methods of destruction. — As *Scythris* adults are nocturnal moths I tried to attract them by luminous snares, and an acetylene "Phare-Méduse" lamp was lighted about eight o'clock in the evening and kept alight for the four following hours. In the morning I found in the lampstand some thousand *Scythris* specimens. I therefore conclude that luminous snares are an excellent means of destroying the adults. Directly they are touched by the paraffin the insects are suffocated by the capillary penetration of this liquid into the openings of the tracheae.

A second attempt with 1 ½ % sulphuric acid, as in the first instance,

having been somewhat inconclusive I had to double the strength to achieve better results. My final, 3 %, solution proved very effective.

The commercial sulphuric acid used was standard Beaumé 63° but the Vermorel spraying apparatus, portable and with only one jet had too small a discharge for dealing satisfactorily with the moths on the vast stretches under cereals.

One litre of pure sulphuric acid at 63° diluted in 45 litres of water was enough to treat an infested area of 150 square metres without having any effect on plant growth, as the cereals had not yet headed. Moths only just touched by the liquid, owing to faulty handling, survived the action of the acid, while those on the other hand which had a good dose of the solution were overwhelmed.

Results obtained by the use of sprays with weak and low power of discharge are very unsatisfactory and in any case it takes a long time to treat a hectare unless a large number of sprays are obtained for the treatment of large areas.

This treatment ought to begin with the appearance of the first *Scythris* moths among the cereals and the actual operation should preferably be carried out in the morning or the evening in the absence of wind.

It is intended to make a trial of dilute sulphuric acid on fields attacked by *Scythris* larvae containing such a proportion of acid as may burn the plants attacked as well as the larvae in them.

VARIOUS QUESTIONS RELATING TO PLANT PROTECTION IN THE DIFFERENT COUNTRIES

Algeria : Situation at the Breeding-Places of *Dociostaurus maroccanus* in the three Departments during May, 1927 (1).

DEPARTMENT OF ALGIERS. — The campaign is finished nearly everywhere. In those Communes where it has been conducted methodically and energetically it has yielded such very definite practical results as to permit the hope of a less serious campaign in 1928 than the present one. "Melhafas" and poisoned baits have everywhere given the best results.

I. Mixed Commune of Aïn-Boucif. — The locusts took their flight about 15 May; the squads have had to be

(1) Communication from the Governor General of Algeria to the President of the International Institute of Agriculture.

disbanded in the douars of Birine, Bennehar, Zemzach, Kef Lakdar, as also in the parts south of Tittery and Tirghane. Some late hatched insects penetrated into the mixed Commune of Berrouaghia, where control measures are still in force.

The insects are settling on the crops and causing serious damage. Only poisoned baits are now being used against them.

II. Mixed Commune of Aumale. — The few remaining insects having taken their flight, control measures are no longer possible and the squads have been disbanded. Swarms in flight from M' Sila and Sidi-Aïssa have been reported and the most careful watch is being kept to note the exact egg deposit areas.

III. Mixed Commune of Boghari. — Control measures stopped as from 26 May. Despite the excellent way in which these were carried out, some insects nevertheless took their flight in the douars of Ouled-Mareuf and M'fatah. The loss is estimated at about 300 hectares of cereals.

IV. Commune of Boghari P.E. — The extermination of young insects has been completed in this Commune, the infestation having been slight.

V. Mixed Commune of Chellala. — The squads stopped their work on 27 May. Only a few stray insects escaped and took their flight.

VI. Mixed Commune of Sidi-Aïssa. — The locusts took their flight in the douars of Zemlane and Ali ben Daoud. Extermination seems complete in the great breeding place of Sidi-Hadjerès.

DEPARTMENT OF CONSTANTINE. — In this Department also the campaign is at an end and most important results have been achieved.

VII. Mixed Commune of Ain-el-Ksar. — A general use of "melhafas" has brought about the complete destruction of *Doclostaurus maroccanus*.

VIII. Mixed Commune of Aïn-M'lila. — Some locusts took their flight in the douar of Oules Sebaa. Control measures have necessarily stopped.

IX. Mixed Commune of Belezma. — The breeding-place notified at Boughzel has been completely destroyed.

X. Mixed Commune of Chateaudun-du-Rhumel. — In this Commune, the most seriously infected, a complete destruction of *D. maroccanus* was achieved. As elsewhere the use of "melhafas" gave surprising results.

XI. Mixed Commune of Les Bibans. — Certain infestations previously notified have been wiped out.

XII. Mixed Commune of Les Eulma. — The campaign was greatly facilitated by the large numbers of egg-capsules collected. Hatchings were insignificant. The campaign is finished.

XIII. Mixed Commune of Les Maadid. — Thanks to firm measures the danger existing in this Commune has been surmounted. Only the centre of Bordj R'dir is still infected, and it is hoped to continue an unceasing destruction of the remaining insects.

XIV. Mixed Commune of M'Sila. — Some locusts have taken flight on the Sidi-Aïssa boundary. Everywhere else their destruction has been practically complete. "Melhafas" and poisoned bran have given excellent results.

XV. Mixed Commune of Les Rirha. — Squads are still working in the douar of Ouled Braham against a swarm of young insects coming from Les Maadid. The campaign has finished in the other douars.

XVI. Commune of Tocqueville P.E. — The squads specially responsible for preventing the young insects from entering their territory from adjacent Communes have been disbanded. Thanks to very careful collection of egg-capsules during the whole winter, hatchings in this Commune have been unimportant.

DEPARTMENT OF ORAN. — The campaign may now be considered ended.

XVII. Commune of Berthelot P.E. — The locusts have taken their flight, the only control measure still in use being poisoned baits.

XVIII. Mixed Commune of Frenda. — A considerable number of locusts are in flight above the breeding-places of Martimpry and Tagremaret. Control measures are no longer possible.

XIX. Mixed Commune of Saïda. — The feebleness of the attack this year has allowed efficient control measures to be taken against *D. maroccanus*, which has been exterminated. Burning on alfa and poisoned baits have given excellent results.

XX. Mixed Commune of Têlagh. — Control measures are still in progress at Melrir where a swarm of young insects has arrived from Berthelot. The use of poisoned baits gives the best results.

Bermuda: Natural Control of Fruit Fly and Mealy Bugs (1).

During the summer of 1926 80 females and 66 males of the Braconid *Opius humilis*, Silv., parasitic on the Mediterranean Fruit Fly, *Ceratitis capitata*, Wied., were liberated in Bermuda. These were bred by OGILVIE from material received from Dr. H. F. WILLARD, Hawaii, in February and March of 1926.

49 specimens of *Cryptolaemus montrouzieri*, Muls. and 5 of *Scymnus binaevatus*, Muls., Coccinellids predaceous on mealy bugs, received from Mr. H. S. SMITH, California, were liberated throughout the summer of 1926.

Nigeria: A List of the Principal Insect Pests (2).

Cotton. — *Dysdercus supersticiosus* F., *D. melanoderes*, Karsch., and *D. fasciatus*, Sign. (family Pyrrhocoridae), introducing *Nematospora* sp. into bolls.

(1) Communication from the official correspondent to the Institute, Mr. Ernest Albert McCALLAN, Director of Agriculture, Department of Agriculture, Agricultural Station, Paget East, Bermuda.

(2) Communication from the official correspondent to the Institute, Mr. F. D. GOLDING, Senior Entomologist, Agricultural Department, Ibadan, Southern Provinces, Nigeria.

Diparopsis castanea, Hmps. (family *Noctuidae*). Larvae attacking bolls and buds.

Earias biplaga, Walk. (family *Noctuidae*). Larvae attacking bolls, buds and shoots.

E. insulana, Boisd. Larvae attacking bolls and buds.

Y a m s. — *Heteroligus claudius*, Klug. (family *Dynastidae*). Adults attacking tubers.

C a c a o. — *Sahlbergella singularis*, Hgl. (family *Capsidae*). Adults and nymphs attacking pods and shoots.

Turkey : Animal Pests at present most harmful to Crops (1).

Dociostaurus maroccanus Thunb. : 21 vilayets have been attacked over an area of 33,895 hectares. Hatching varies according to the locality and to the progress of the season. Generally it occurs in the first days of April. Control measures used are : (a) the collection of egg-capsules after removing the soil ; (b) the capture of the young insects by means of screens ; (c) the spraying of the herbage with arsenical poisons (" *Urania* ") and the scattering of poisoned baits ; (d) zinc barriers.

(2) *Dacus oleae* (Rossi) Meig. : for the execution of control measures in the olive-yards of six vilayets the mixture recommended by Professor A. BERLESE has been chosen.

(3) *Hyponomeuta malinellus* Zell. and *Hyp. padellus* L. : the damage produced by those Microlepidoptera in four vilayets is fairly serious. Control measures take the form of spraying the tender leaflets with arsenical poison.

(4) Voles : very important from the economic point of view for the damage done by them on the crops of the Republic. 31 vilayets are infested over an area of 382,864 hectares. Control measures consist in scattering soft bait powdered with insoluble arsenical poisons at the entrances of the holes where the voles live.

(1) Communication from the official correspondent to the Institute, Mr. REDJEB RIFAT, Professor of Entomology, Head of the Agrarian Entomological Laboratory of the " Ecole supérieure d'Agriculture ", Halkali-Stambul.

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria (1). — By Order of the Governor General dated 28 December, 1926, the Regulations laid down by the Law of 25 December, 1919, and the Decree of 10 July, 1920 will apply to all the Communes of Northern Algeria in 1927. A compulsory Syndicate for protection against locusts will be established in each of the administrative areas indicated above among all farmers under conditions set out in Article 3 of the Decree of 10 July, 1920. (*Journal officiel de l'Algérie*, Alger, 7 janvier 1927, 1^{ère} année, n° 1, p. 10).

England. — By Order of the Minister of Agriculture and Fisheries, for the prevention of the introduction of the Cherry Fruit Fly, the landing in England or Wales of any raw cherries grown in France is prohibited as from 24 June until 30 September, 1927. The landing of raw cherries not grown in France but shipped from any port in European France is prohibited unless each consignment is accompanied by a certificate of origin visé by a local authority in the country of origin.

This Order revokes the Importation of Raw Cherries Order of 1927. (*The Importation of Raw Cherries Order of 1927 (No. 2) Dated 16th June, 1927.* (D. I. P. 548). [London], 1927, 2 pp.).

* * By Order of the Minister of Agriculture and Fisheries, for the purpose of preventing the introduction of the Potato Moth (*Phthorimaea operculella*, Zell.) the landing in England and Wales of any potatoes grown in Malta is prohibited as from 21 June, 1927, unless each consignment is accompanied by a certificate as prescribed in the Third Schedule of the Destructive Insects and Pests Order of 1922. (*The Importation of Potatoes (Malta) Order of 1927. Dated 21st June, 1927.* (D. I. P. No. 549). [London], 1927, 1p.).

* * The Ministry of Agriculture and Fisheries, on the recommendation of its Horticultural Advisory Council, proposes to set up a voluntary scheme of inspection and certification of Strawberry plants, which will be useful in the case of sales of stocks. Plants from which runners are intended to be taken for sale will, on application by growers, be inspected

(1) The countries are arranged in the French alphabetical order.

and certified if they are found to be true to variety. Present knowledge of certain of the diseases of Strawberries is insufficient to enable the Department to certify entire freedom from them, but certificates will not be issued for stocks which are obviously unhealthy. Lists of growers holding certificates in respect of Strawberry stocks will be published at the end of the inspection season so that purchasers may be informed of them.

A fee of 7s. 6d. per acre or part of an acre of Strawberry plants inspected will be charged for each inspection, with an additional charge of 1s. per certificate, and 3d. for each copy certificate. (*The Gardeners' Chronicle*, London, 1927, vol. LXXXI (third series), no. 2107, p. 332).

* * The Ministry of Agriculture and Fisheries, on the recommendation of its Horticultural Advisory Council, proposes to set up a voluntary scheme of inspection and certification of stocks of Black Currant bushes intended for sale. Stocks will be inspected on application, and certificates will be issued for those which are found to be true to type, and also apparently reasonably free from reversion. The issue of a certificate will not imply that the stock to which it relates was found to be free from all disease, but no certificate will be given for any stock which is obviously infested with Black Currant mite [*Eriophyes ribis*, Nalepa] or is otherwise obviously unhealthy at the time of inspection. A fee of 7s. 6d. per 1,000 bushes will be charged for the inspection (fractions of 1,000 will be charged as 1,000), with additional fees of 1s. for the certificate and 3d. for each copy certificate. (*The Gardeners' Chronicle*, London, 1927, vol. LXXXI (third series), no. 2112, pp. 423-424).

Austria (Tyrol). — The Tyrol diet ("Landtag"), in fulfilment of the enactments concerning potato wart disease control contained in Federal Law (B.G.Bl. Nr. 215) of 28 July, 1926, has passed Law No. 22 of 18 February, 1927 on the control of wart disease, the regulations of which are in essential agreement with those already issued of Burgenland (See No. 5 of this Review). (*Landes-Gesetz- und Verordnungsblatt für Tirol*, 29 April 1927, Jahrg. 1927, Stück VI, S. 20-23).

Belgium. — By Order of the Minister of Agriculture 28 June, 1927 the importation into Belgium of fresh cherries coming from France is only authorized as from 1 July, 1927, provided that the consignments are accompanied by a certificate issued by the French Phytopathological Service, attesting:

(a) that these goods come from a district exempt from the cherry fruit fly (*Rhagoletis cerasi*);

(b) that these consignments themselves have been found by the said Service free from *Rhagoletis*.

Importations will only be allowed, for goods sent by water through the custom-houses of Antwerp, Bruges, Brussels, Ghent, Ostend, and for importations by land through custom-houses situated on the railway or through the following custom-houses:—

Beaubru (Bouillon), Bléharies, Comines (village), Florenville, Les Baraques (Menin), Leysele, Montaleux (Mouscron), Neuve-Eglise, Rongy.

Consignments not accompanied by the certificate prescribed above will be rejected unless they are found on examination by the special Belgian Phytopathological Service, made at the expense of the importers, to be free from *Rhag. cerasi*.

Every producer or warehouse of cherries, noting the presence of *Rhag. cerasi* in his crop or his storehouse must immediately declare the fact to the mayor of the Commune, who will inform the Minister of Agriculture by telegraph. (*Moniteur Belge*, Bruxelles, 1^{er} juillet 1927, 97^e année, n° 182, p. 3033).

Bermuda (1). — Imported seed potatoes, nursery stock, bananas and citrus fruits are subject to inspection. Good results are being secured from the inspection of celery seed for late blight pustules by the Department of Agriculture. In 1926 a record crop of 37 286 crates was harvested and up to the time of writing (March, 1927) the present crop is entirely free from blight.

The following plants are prohibited entry :

- (a) Banana plants and parts thereof, except fruit.
- (b) Bulbs of *Lilium longiflorum* type.
- (c) Antirrhinum or snapdragon plants.
- (d) Citrus plants and citrus fruits (unless the latter are free from leaves and portions of the plants) imported from the West Indies and Bahamas.
- (e) Irish potatoes from Great Britain and Ireland, the countries of Europe and Newfoundland and the islands of St. Pierre and Miquelon, and Chili Garnet and Bliss Triumph potatoes from all sources unless conforming to seed potato Regulations.
- (f) Sweet potatoes from the United States of America, Cuba, Bahamas, British Guiana, Jamaica, Canal Zone and Porto Rico.
- (g) Carrots in their raw or untreated state.

All produce intended for export is inspected immediately previous to shipment.

Chile. — Decree No. 143, of 16 March, 1927 authorizes the importation of rice through Puerto Montt, subject to preliminary sanitary inspection carried out by the Inspector of the "Servicio de Policía Sanitaria Vegetal", in accordance with the Regulations of Decree No. 450, of 6 August, 1926. (*Diario oficial de la República de Chile*, Santiago, 24 de marzo de 1927, año L I, núm. 14,730, pág. 1223).

(1) Communication from the official correspondent to the Institute, Mr. Ernest Albert McCallan, Director of Agriculture, Department of Agriculture, Agricultural Station, Paget East, Bermuda.

* * By virtue of Decree No. 145, of 16 March, 1927, fresh or dried fruits, potatoes, onions and garlic intended for export must be inspected at Valparaíso, Talcahuano, and Los Andes by the "Servicio de Policía Sanitaria Vegetal" to determine whether they are healthy.

If the above products are recognized at inspection to be free from dangerous diseases, a health certificate will be issued on which the exporters will be allowed to ship the goods. (*Diario oficial de la República de Chile*, Santiago, 24 de marzo de 1927, año LI, núm. 14, 730, págs. 1223-1224).

* * By Decree No. 190, of 23 March, 1927, free importation of tropical fruits has been authorized from all the ports lying between Arica and Huasco. (*Diario oficial de la República de Chile*, Santiago, 31 de marzo de 1927, año LI, núm. 14, 736, pág. 1311).

Spain. — By Royal Decree No. 832, of 29 April, 1927 live plants or parts of plants, seedlings, branches, vine shoots, roots, tubers, bulbs, rhizomes, leaves, seeds and fruits with or without peel, as well as saffron and powdered capsicum, intended for export must be accompanied by a certificate of freedom from diseases and pests, and of good quality.

For this purpose a Service of inspection both for freedom from diseases and pests and for quality will be established in the forwarding ports and frontier stations by means of mixed "Juntas" composed of one technical expert ("Ingeniero Agrónomo") or his deputy, who will act as president and will be appointed by the Directorate of Agriculture and Forests ("Dirección General de Agricultura y Montes"), of an exporter and a producer of each type of goods, appointed by the Associations both agricultural and those responsible for the export, and of a member of the Provincial council of National Economy, appointed by the Governor.

If the inspected goods are passed as suitable for export by the "Junta", the president of this body provides for the issue of the proper certificate of freedom from diseases and pests and of good quality. The "Junta" itself can reject, without the right to any form of indemnity, goods found unsuitable for export. The custom-house will not allow the export of any of the above mentioned plant products unaccompanied by the prescribed certificate.

The inspection dues and those for granting the certificate will be received by the "Junta" and charged to the exporter. The exporter can appeal against the decisions of the "Junta" to the National Phytopathological Service, sending the latter together with the decision of the "Junta" a sample of the rejected goods, taken by the "Junta" in his presence, and closed and sealed. The decision of this Service will be telegraphed and is final. (*Gaceta de Madrid*, Madrid, 4 mayo de 1927, año CCLXVI, tomo II, núm. 124, págs. 841-842).

France. — To provide the guarantees necessary for avoiding the introduction into British territory of cherries infected by the cherry fruit

fly (*Rhagoletis cerasi*) and to obtain the repeal of the phyto-sanitary measures taken by the English Government in 1926, a "Syndicat national des exportateurs de cerises en Grande-Bretagne" has been formed and is open to all producers and traders interested. Its present headquarters are 26 Place Tolozan, Lyons. (*Journal officiel de la République Française*, Paris, 4 mai 1927, LIX^{ème} année, n° 104, p. 4796-4797).

Italy. — By Decree of the Prefect of Catania dated 27 May, 1927 an Association ("Consortio") has been established which is compulsory for all the owners of olive-yards in the territory of the Commune of Bronte for the control of the olive fly [*Dacus oleae*]. (*Il Coltivatore Siciliano*, Catania, 1927, anno VI, n. 5, p. 148).

* * By Decree of the Prefect of Catania dated 28 May, 1927, four Associations ("Consorti") of landowners of the Commune of Paternò, have been recognized for the purpose of controlling the diseases, insects and other plant pests, especially those of citrus plants by means of poisonous gas fumigation. (*Il Coltivatore Siciliano*, Catania, 1927, anno VI, n. 5, p. 148).

* * Following the presence of grape phylloxera [*Phylloxera vastatrix*] which has been determined in the Commune of Monteporzio, in the Province of Pesaro-Urbino, a Ministerial Decree of 14 June, 1927 has extended to the territory of this Commune the rules contained in arts. 10-14 of Regulation No. 1099 of 13 June, 1918 relating to the exportation of such materials as are indicated in nos. 1, 2, 3 and 4 of art. 10 of the same Regulation. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 20 giugno 1927, anno 68°, n. 141, p. 2528).

* * By Decree of 9 June, 1927 the Minister of Finance in conjunction with the Ministers of the Interior and of National Economy have fixed the rules for the application of Royal Decree-Law No. 150, of 13 February, 1927, concerning custom-house treatment of products made from absorbent materials impregnated with hydrocyanic acid, intended for use in the destruction of plant parasites. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 22 giugno 1927, anno 68°, n. 143, pp. 2551-2552).

* * Owing to the presence of grape phylloxera [*Phylloxera vastatrix*] as determined in the Communes of Pentima, in the province of Aquila degli Abruzzi, and of Popoli, in the province of Pescara, Decrees of 17 June, 1927 have extended to the above Communes the rules contained in articles 10-14 of the Regulation No. 1099 of 13 June, 1918 concerning the exportation of such materials as are indicated in nos. 1, 2, 3 and 4 of art. 10 of the same Regulation. (*Gazzetta ufficiale del Regno d'Italia*, Roma, 22 giugno 1927, anno 68°, n. 143, p. 2552).

Mexico. — "Circular" No. 9-17, of 14 March, 1927, imposes compulsory sanitary inspection of cotton seeds and of coffee seeds at the frontier and port custom-houses. (*Diario oficial*, México, 29 de marzo de 1927, tomo XLI, núm. 24, págs. 3-4).

* * * "Circular" No. 9-18, of 14 March, 1927, prohibits the importing of potatoes coming from California in view of the Potato Moth (*Phthorimaea operculella*). (*Diario oficial*, México, 29 de marzo de 1927, tomo XLI, núm. 24, pág. 4).

* * * "Circular" No. 9-19, of 14 March, 1927 declares the cotton zone of Tamaulipas, which comprises the municipalities of Nuevo Laredo, Matamoros, Reynoso, Camargo, Mier, Guerrero, San Fernando, Sotto la Marina, Güémez, Ciudad Victoria, Jaumave and San Manuel, infested by the Cotton Boll Weevil (*Anthonomus grandis*) and consequently prohibits the removal of cotton seed from this zone. (*Diario oficial*, México, 29 de marzo de 1927, tomo XLI, núm. 24, pág. 4).

* * * "Circular" No. 9-25, of 14 March, 1927, prohibits the removal of vine shoots coming from Cuatro Ciénegas (Coahuila) unless previously fumigated for eight hours with carbon disulphide in the proportion of 60 gm. of carbon disulphide to every square metre of the place in which the fumigation is actually carried out. (*Diario oficial*, México, 29 de marzo de 1927, tomo XLI, núm. 24, pág. 4).

Sweden. — Royal Decree No. 92, of 8 April, 1927, containing the regulations for the importation into the Kingdom of live plants and plant parts. A list is given of the plants and plant parts, the import of which is forbidden if coming from countries declared infected with foot-and-mouth disease. Plants and parts of plants not occurring on the above list may be imported provided the parcel is accompanied by a detailed advice note and by a certificate issued by the competent authority in the country of origin guaranteeing that the particular parcel contains no plants or plant parts included in the above list. (*Svensk författningssamling*, Stockholm den 12 april 1927, Nr 92-94, sid. 129-132).

* * * Decree No. 93, dated 9 April, 1927, of the Royal Administration of Agriculture contains — in accordance with the provisions of Art. 4 of Royal Decree No. 92, of 8 April, 1927 — the list of plants and plant parts susceptible to infection by diseases and animal and vegetable parasites, which constitute a danger for the spread of these enemies in the Kingdom. (*Svensk författningssamling*, Stockholm den 12 april 1927, Nr 92-94, sid. 132-133).

Uruguay. — A "Resolución", No. 264/926, of 11 March, 1927 provisionally opens the port of Santa Rosa del Cuareim for the importation of oranges. They must be imported into the Republic in closed wagons, which will be opened in Salto by the regional agricultural officer, who will arrange for their inspection and the grant of a certificate of health after preliminary fumigation and payment of costs. (*Diario oficial de la República Oriental del Uruguay*, Montevideo, 17 de marzo de 1927, tomo LXXXVI, núm. 6246, pag. 692-A).

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NOTES

Station for Biological Control of Insect Pests. — The Empire Marketing Board has provided funds for the establishment of a Station at Farnham Royal, under the direction of the Imperial Bureau of Entomology, London, to discover, breed and despatch over the British Empire parasites which may keep down the number of harmful insects.

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